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Transfer Pricing Challenges in the Digital Economy: *Hic Sunt Dracones?* (Part I of II)

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INTRODUCTION

Are the current OECD and IRS transfer pricing methods and guidance adequate for taxing the global profits of multinational enterprises (MNEs) in the digital economy? If not, how might U.S. transfer pricing practitioners in business, consulting, and government work together to modify the approaches to reflect how value is created and measured in evolving digital business models?¹

In the digital economy, value is not created in isolation by a company for the benefit of the customer but, in fact, is created as a consequence of the constant flow of information between the company and the customer. Value creation, therefore, is no longer a static eventuality at the end of a value chain but rather a result of dynamic interaction within a digital ecosystem of shops and networks. From a transfer pricing perspective, these new business models challenge transfer pricing and international tax practitioners to consider whether their existing frameworks still apply.

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¹ We thank Reilly Smith for research assistance and William Byrnes for helpful comments. Early versions of this paper were presented at meetings of the American Bar Association—Tax Section, NABE Transfer Pricing Symposium, World Investment Forum, and International Studies Association. The views and opinions expressed here belong solely to the authors, and not to their employers or to any other group or individual.

This issue is critical as we move into a digital world characterized by continuous and circular data flows, value shifts, and greater functional complexity of related and unrelated parties, both across space and time.

In 2017, the OECD made major revisions to its *Transfer Pricing Guidelines* to incorporate BEPS Action Items 8 to 10, “Aligning Transfer Pricing Outcomes with Value Creation.”² In the new guidelines, the arm’s-length standard has been reinterpreted as aligning transfer pricing outcomes with value creation based on the location of the “key functions performed, important risks assumed, and important assets used.”³ The OECD has now turned to BEPS Action Item 1, “Addressing the Tax Challenges of the Digital Economy.”⁴ New tax policy proposals, which would change the nexus and profit allocation rules for taxing MNEs, are circulating for discussion.⁵ The stated purpose here also is the goal of better aligning taxable income with value creation, but specifically for digital and digitalizing businesses.

Both national tax authorities and multilateral organizations such as the OECD and the European Com-

² Compare 2017 OECD, *Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations* (Paris, July 2017) with 2015 OECD, *Aligning Transfer Pricing Outcomes with Value Creation. Actions 8–10: 2015 Final Reports*, OECD/G20 BEPS Project (Paris).

³ 2017 OECD, *Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations*, at 502 (Paris, July 2017).

⁴ 2015 OECD, *Addressing the Tax Challenges of the Digital Economy. Action 1: 2015 Final Report*, OECD/G20 BEPS Project (Paris).

⁵ 2018 OECD, *Tax Challenges Arising from Digitalisation—Interim Report 2018*, Inclusive Framework on BEPS, OECD/G20 BEPS Project (Paris); 2019 OECD, *Addressing the Tax Challenges of the Digitalization of the Economy—Policy Note*, as approved by the Inclusive Framework on BEPS, OECD/G20 BEPS Project (Paris, Jan. 23, 2019); 2019 OECD, *Addressing the Tax Challenges of the Digitalization of the Economy—Public Consultation Document*, OECD/G20 BEPS Project (Paris, Feb. 13–Mar. 1, 2019); 2019 OECD, *Measuring the Digital Transformation: A Roadmap for the Future* (Paris); 2019 OECD, *Tax and Digitalization, OECD Going Digital* (Paris).

mission are actively engaged in proposing new tax policies for the digital economy firms. The “Big Five” digital MNEs (Amazon, Apple, Facebook, Google, and Netflix) have been not only the poster children for the digital economy, but also the targets for much of the public wrath over MNEs in the digital economy and of these new tax policy changes (viz., the “Google tax” in the U.K.).

Despite the enormous amount of work going on in terms of developing and studying the various digital tax proposals, we were unable to find detailed transfer pricing studies applying the 2017 OECD *Transfer Pricing Guidelines* to the new business models in the digital economy. Without such “base case” studies, we worry that the current proposed digital tax policy changes could have significant and unintended consequences for the existing transfer pricing rules. We believe that policy makers need to better understand how the value creation approach to the arm’s-length standard would apply to Industry 4.0 business models, before starting to change the rules again. We therefore urge caution in case *hic sunt dracones* (“there be dragons”).

This paper is the first in a two-part series and is designed to illustrate the complexity of digital business models and the challenge of applying transfer pricing analyses based on the value creation approach. In the first paper, we discuss the old and new firms in the digital economy, we review the OECD’s BEPS project focusing on BEPS Action Items 8–10 (value creation) and 1 (digital economy). We argue that, given the newness and complexity of these new digital business models, we need to better understand the challenges they create for applying transfer pricing analyses based on the value creation approach in the 2017 OECD *Transfer Pricing Guidelines*.

In the second paper, to better understand the challenges that the digital business models pose for transfer pricing analysis, we examine a stylized case study drawn from the technology industry, specifically, from the emerging world of the Internet of Things (IoT).⁶ The IoT has been defined as “sensors and actuators connected by networks to computing systems” where the connected sensors and systems are used to “monitor or manage the health and actions of connected objects and machines [and] the natural world, people, and animals.”⁷ The IoT emerged from the convergence of multiple new technologies, including but not limited to, embedded systems, artificial intelligence, real-time data analytics, enhanced data virtualization, and increased storage capacity within cloud-based solutions.⁸ As such, the IoT provides an excellent case study for us to study the challenges of transfer pricing in the digital economy.

Our second paper provides an overview of the IoT system and outlines two new business models: the Direct Model and the Partner Model. We then evaluate each model from a traditional transfer pricing analysis framework. We argue that the IoT creates at least four challenges for transfer pricing: (i) data as a new type of related-party transaction; (ii) circularity of and value shifts in the IoT data/insight exchange; (iii) the speed of technological change and functionality; (iv) and difficulty in characterizing control, decentralization and cooperation among the related parties. We explore each challenge and conclude that more work is needed to “lift the veil” on transfer pricing in the digital economy.

OLD AND NEW FIRMS IN THE DIGITAL ECONOMY

Rapid changes in information and communication technologies (ICT) are causing a process of Schumpeterian creative destruction in markets all over the world. ICT is disrupting markets in multiple ways, for example, through automation of knowledge-based work, the IoT, cloud computing, advanced robotics, 3D printing, and advanced materials.⁹ ICT is ushering in the Fourth Industrial Revolution (“Industry 4.0”) or what everyone now calls the “digital economy.”¹⁰

Industry 4.0 has three key features: mobility, network effects, and data usage, of which the mobility and data usage features are well illustrated by the IoT solution and have the power to disrupt traditional business models and markets.¹¹

- *Mobility*: Once the blueprint for a digital product has been developed, the marginal costs of producing, replicating, and providing a digital product to consumers around the world are normally minimal. The main cost is thus the fixed cost of developing the blueprint, and the replication stage can be located wherever total costs are the lowest. Digitalization can generate huge economies of scale and scope on the supply side.
- *Network effects*: Whenever the value of a product to its users increases with the number of other users of the product, economies of scale and scope (EOSS) are created through these network effects. Network effects are particularly strong in Industry 4.0 because digital platforms not only attract users but also other groups, such as advertisers and

⁶ Srinivasan, Lalapet, and Eden, *Transfer Pricing Challenges in the Digital Economy: A Case Study of the Internet of Things (Part II of II)*, 48 Tax Mgmt. Int’l J. 256 (June 2019).

⁷ McKinsey Global Institute, *The Internet of Things: Mapping the Value Beyond the Hype*, at 17 (McKinsey & Co., June 2015).

⁸ Frost & Sullivan, *Bridging the Gap Between Operations and Information Technology: Accelerate IoT Solution Development and Deployment with Telit* (whitepaper) (2018) (www.frost.com).

⁹ McKinsey Global Institute, *The Internet of Things: Mapping the Value Beyond the Hype*, at 17 (McKinsey & Co., June 2015).

¹⁰ Schwab, K., *The Fourth Industrial Revolution*, World Economic Forum (Geneva, 2016). We use the terms “digital economy” and “Industry 4.0” interchangeably in this paper.

¹¹ European Commission, *Report of the Commission Expert Group on Taxation of the Digital Economy*, at 12 (Brussels, May 28, 2014).

applications developers.¹² Two-sided networks where both buyers and sellers interact on online platforms are common (e.g., Amazon, eBay, HomeAway, UBER).

- *Data usage*: The third feature of Industry 4.0 is the growing usage of data caused by information and communications technologies (ICT) “continuously driving down the costs of collecting, storing and analyzing data.”¹³ As the volume of data grows and the costs of generating and storing data fall, the market-making costs (i.e., the costs of search, negotiations, monitoring and enforcement) also decline, generating even more opportunities for domestic and cross-border trade.

These three characteristics of Industry 4.0—mobility, network effects, and data usage—are disrupting markets all over the world. At least three new business models are emerging. The first model is the open innovation platform where firms involve other firms and customers in their innovation and development processes. Such open innovation encourages crowdsourcing of ideas, designs and problem-solving solutions. The second model is distributed manufacturing where advanced manufacturing technologies such as 3D printing enable firms to move production closer to customers, engage in small-lot customized production, and integrate customers, designers and other firms into the value creation process. The third model is horizontal platform-based collaboration for particular functions, such as joint procurement and information gathering services and shared use of transportation and storage facilities.

To understand how ICT is affecting firms, it is useful to distinguish between firms that are partially digital and those that are wholly digital. Traditional “brick-and-mortar” businesses that are adapting ITC into their existing production processes and product lines are “Going Digital”;¹⁴ they may be digital users, digital producers, or both. In order to survive in the digital economy, the Going Digitals are having to develop new business models, and new strategies and structures, to cope with ICT.

The second group are the wholly digital businesses—the “Born Digitals”—which are the true hallmark of Industry 4.0. These firms have been digital from inception, operate digitally, and have their products delivered digitally. Born Digitals can be differentiated in a variety of ways, such as whether they

provide digital platforms, commerce, content, or solutions.¹⁵

There is little doubt that value creation, the *raison d’être* of the modern business enterprise, has been transformed by the digital economy. The digitalization of brick-and-mortar firms, together with the Born Digitals that are hallmarks of the digital economy, have opened new possibilities for value creation. In what ways do both types of firms create value and how do they differ? How does one measure where and how value is created in digital economy firms, and does this pose a challenge to the application of existing transfer pricing guidance and regulation? To address these issues, we need to first review how global business profits of MNEs are currently taxed.

TAXING MULTINATIONALS IN THE DIGITAL ECONOMY

Value Creation and the Arm’s-Length Standard

Whether current OECD and IRS transfer pricing methods and guidance can handle the digital economy has become a much more salient question as a result of the OECD’s base erosion and profit shifting (BEPS) project. Part of the motivation for the BEPS project was that the arm’s-length standard, the traditional norm for allocating profits between tax jurisdictions since the 1930s, was widely perceived as unable to cope with and vulnerable to manipulation by 21st century MNEs. While many experts recommended its replacement with formulary apportionment, others argued that the arm’s-length standard was salvageable.¹⁶

The OECD opted for salvaging the standard, deciding to reframe it in terms of *value creation*. Three of the BEPS Action Items released in September 2015 focused specifically on transfer pricing: Action Items 8, 9, and 10.¹⁷ Revised versions of these documents were adopted into the 2017 OECD *Transfer Pricing Guidelines*.¹⁸ Transfer pricing outcomes, as measured through functional and value chain analyses, would be aligned with value creation where the “principal contributions to value creation by individual entities within the group” would be measured by the “key functions performed, important risks assumed, and important assets used.”¹⁹ Holding legal title to intangible assets, being assigned particular risks, or providing financial capital to an entity—these activities would no longer be sufficient to allocate profits within

¹² 2019 OECD, *Addressing the Tax Challenges of the Digitalization of the Economy—Public Consultation Document*, at 8–9 OECD/G20 BEPS Project (Paris, Feb. 13–Mar. 1, 2019).

¹³ European Commission, *Report of the Commission Expert Group on Taxation of the Digital Economy*, at 12 (Brussels, May 28, 2014).

¹⁴ Eden, Lorraine, *The Fourth Industrial Revolution: Seven Lessons from the Past, International Business in the Information and Digital Age* (Alain Verbeke, Robert van Tulder & Lucia Piscitello eds.), *Progress in Int’l Bus. Research*, Vol. 13 (European Int’l Bus. Academy and Emerald Pub., 2019).

¹⁵ *Id.*

¹⁶ Eden, Lorraine, *The Arm’s Length Standard: Making It Work in a 21st Century World of Multinationals and Nation States* (Thomas Pogge & Krishen Mehta eds.), Global Tax Fairness (Oxford University Press, 2016).

¹⁷ 2015 OECD, *Aligning Transfer Pricing Outcomes with Value Creation, Actions 8–10: 2015 Final Reports*. OECD/G20 BEPS Project (Paris).

¹⁸ 2017 OECD, *Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations* (Paris, July 2017).

¹⁹ *Id.*, at 502.

the MNE group of entities. Under the value creation approach to the arm's-length standard, what mattered for profit allocation was which entity was the economic owner of the intangibles and which entity actually managed and bore the risks.

Transfer pricing professionals in industry and business consulting are now grappling with preparing transfer pricing analyses that interpret the new value creation standard. In addition, country-by-country reporting,²⁰ which will provide much greater details to national tax authorities about the MNEs' worldwide activities and entities, has also heightened concerns about additional tax audits and transfer pricing disputes.

Taxing Digital Economy Firms

The OECD is now engaged in another set of major policy changes, this time focused on digital businesses, with the goal of better aligning value creation for tax purposes in the digital economy. BEPS Action Item 1 focused on the tax implications of the digital economy.²¹ After public comments, the OECD issued a 2018 Interim Report.²²

The Interim Report outlined various models of digitalized businesses, concluding that they have three key characteristics: (i) a global reach of business functions and activities, which can be conducted at local operational scale but without a local physical presence (scale without mass); (ii) heavy investment in intangibles, especially intellectual property (IP) assets; and (iii) the importance of data, user participation and user generated content, network effects, and synergies with IP as sources of value creation.²³ The Interim Report argued these three characteristics made it difficult for governments to tax the cross-border activities of digitalized firms using existing international tax rules. The report concluded that new tax rules for the digital economy were needed and should build on the principles outlined in OECD of aligning profits with underlying economic activities and value creation.²⁴

On January 23, 2019, the OECD released a Tax outlining two pillars for discussion "without prejudice."²⁵ (i) the allocation of taxing rights between jurisdictions (the nexus pillar), and (ii) whether and how

to strengthen the rights of one jurisdiction to tax profits in cases where the other jurisdiction levies a low effective profit tax rate (the profit allocation pillar).

In February 2019, the OECD/G20 issued a Public Consultation Document²⁶ inviting comments on selected proposals for the nexus and profit allocation pillars. The "over-arching objective" of the proposed changes, according to the OECD, would be to "recognize, from different perspectives, value created by a business's activity or participation in user/market jurisdictions that is not recognized in the current framework for allocating profits."²⁷ In other words, the goal was expanding the taxing rights of user and market jurisdictions.

Three proposals were outlined in the Consultation Document. The first, the "user participation proposal," would give user jurisdictions the right to tax the value created from social media platforms, search engines, and online marketplaces. The second, the "marketing intangibles proposal," would allocate the residual income of the MNE group, after paying for routine activities and production intangibles (e.g., patents), to the market (sales destination) jurisdiction. The third, the "significant economic presence proposal," would redefine nexus as having a significant economic presence, use a multi-factor approach (e.g., user base, digital content, website) to determine nexus, and allocate profits using formulary apportionment. All three proposals would involve radical changes to the existing international tax rules—and could have major impacts on the existing transfer pricing rules.

Two days of public hearings based on public responses to the document were recently held in Paris. The views expressed differed widely, with perhaps the most common agreement being that digital firms should not be ring fenced and that the changes needed much more study given their potentially far reaching effect on the current international tax system.²⁸ Despite the disagreements, the OECD's Task Force on the Digital Economy (TFDE) expects to issue a work plan by early June 2019, with the goal of producing a consensus document by 2020.²⁹

Value Creation and Transfer Pricing in the Digital Economy

With the OECD determined to reach a consensus by next year, we believe it is important to pause and

²⁰ BEPS Action Item 13, 2017 OECD, *Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations*, Ch. 5 Annex (Paris, July 2017).

²¹ 2015 OECD, *Aligning Transfer Pricing Outcomes with Value Creation, Actions 8–10: 2015 Final Reports*. OECD/G20 BEPS Project (Paris).

²² 2018 OECD, *Tax Challenges Arising from Digitalisation—2018 Interim Report*, Inclusive Framework on BEPS, OECD/G20 BEPS Project (Paris).

²³ *Id.*, at 24.

²⁴ 2015 OECD, *Addressing the Tax Challenges of the Digital Economy, Action 1: 2015 Final Report*, OECD/G20 BEPS Project (Paris); 2017 OECD, *Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations* (Paris, July 2017).

²⁵ 2019 OECD, *Addressing the Tax Challenges of the Digitalization of the Economy—Policy Note*, at 2, as approved by the In-

clusive Framework on BEPS, OECD/G20 BEPS Project (Paris, Jan. 23, 2019).

²⁶ 2019 OECD, *Addressing the Tax Challenges of the Digitalization of the Economy—Public Consultation Document*, OECD/G20 BEPS Project (Paris, Feb. 13–Mar. 1, 2019).

²⁷ *Id.*, at 8.

²⁸ Martin, Julie, *Part One: OECD Tax Consultation on Digitalization Features 50+ Speakers, Diverse Viewpoints (Pillar One)*, MNE Tax (2019); Martin, Julie, *Part Two: International Tax Consultation on "Digitalization" Draws 50 Speakers (Pillar Two)*, MNE Tax (2019); VanderWolk, Jeff, *INSIGHT: Slicing the Shadow: OECD Consultation Highlights Profit Allocation Difficulties*, 57 *Daily Tax Rep.* 17 (Mar. 28, 2019).

²⁹ 2019 OECD, *Tax and Digitalization, OECD Going Digital Policy Note* (Paris).

examine these new digital economy business models. Can we identify some of the challenges that they pose for transfer pricing, in particular, for the value creation approach to the arm's-length standard developed in the 2017 OECD *Transfer Pricing Guidelines*? Can the existing transfer pricing rules handle the allocation of profits among associated enterprises—or are additional rules needed specifically for digital economy firms?

In order to explore the applicability and limits of current transfer pricing regimes to firms—both Going Digitals and Born Digitals—that operate in Industry 4.0, in the second paper in this two-part series, we build a case study of the rapidly growing market for Industry 4.0 solutions: the IoT. Our IoT case study exemplifies the key characteristics of Industry 4.0, i.e., *mobility* of an MNC's functions and risks, *network effects* in incorporating an increasing number of customers and vendors into the value creation process, and *data usage*. It also exemplifies a business model where physical “brick and mortar” and newer “digital” technologies intersect in multiple ways to create value using data.

Our second paper starts with a basic explanation of the IoT. We then develop two business models (the Direct and Partner Models) for a digital MNE and compare the two models in terms of their related-party transactions. We conduct FAR (functions, assets, and risks) analyses for both models and explore the likely transfer pricing policies that could be used to value these related-party transactions. We conclude by outlining some of the transfer pricing challenges posed by IoT business models.

CONCLUSION

Are the current OECD *Transfer Pricing Guidelines* adequate for the digital economy? How well do the existing transfer pricing methods measure value creation for the new business models of Industry 4.0? In the first paper, we have explored the old and new firms in the digital economy and reviewed the OECD's BEPS project focusing on BEPS Action Items 8–10 (value creation) and 1 (the digital economy). Our second paper explores some of the challenges that the digital economy poses for transfer pricing in a case study of the IoT.

We conclude from our study that the OECD's attempt to rewrite the tax rules for the digital economy

will be incomplete, and (worse) could be potentially harmful, unless policy makers and practitioners have a much clearer understanding of the new business models that are emerging and their implications for current international tax and transfer pricing regulations. We believe that, given our limited understanding of how value will be created—and can be measured—in the new digital economy firms, it is important that the OECD move slowly. The BEPS project has already introduced significant changes to the international tax and transfer pricing regimes. We have yet to understand the full ramifications of those changes. We are “looking through veil darkly” and should move cautiously.

The OECD is not moving alone, however, in its work on taxing MNEs in the digital economy. Tax jurisdictions ranging from wealthy European Union member states (e.g., Britain, France) to developing countries (e.g., India) are engaged in creating new ways to tax digital businesses.³⁰ Many of these new policies are unilateral and specifically target the Born Digitals. In the absence of a global consensus, there are concerns that unilateral tax policy actions—particularly the so-called “ring fencing” policies targeted at the “Big Five” Born Digitals (Amazon, Apple, Facebook, Google, and Netflix)—could provoke an international tax war.³¹ Coupled with the current wave of nationalism, the backlash against globalization, and a possible trade war between the United States and China, a digital tax war similar to the 1920s when double taxation was the norm, could be sufficient to plunge the global economy into another Great Depression. *Hoc sunt dracones*, indeed!

³⁰ Báez, Andrés and Brauner, Yariv, *Taxing the Digital Economy Post BEPS . . . Seriously*, Univ. of Fl. Levin College of Law Research Paper No. 19-16, (Mar. 1, 2019) (available at SSRN: <https://ssrn.com/abstract=3347503> or <http://dx.doi.org/10.2139/ssrn.3347503>); Grinberg, Itai, *International Taxation in an Era of Digital Disruption: Analyzing the Current Debate*, at 85-118, Taxes (Mar. 2019); Olbert, Marcel and Christoph Spengel, *Taxation in the Digital Economy—Recent Policy Developments and the Question of Value Creation*, ZEW Discussion Paper No. 19-010 (Apr. 2019) (Mannheim, Germany), ZEW—Leibniz Centre for European Economic Research (available at SSRN: <https://ssrn.com/abstract=3368092> or <http://dx.doi.org/10.2139/ssrn.3368092>).

³¹ Cockfield, Arthur, *A Digital-Tax War is Coming to a Galaxy Not So Far, Far Away*, Globe and Mail (Mar. 13, 2019).